REMARKS

The present amendment is in response to the Office Action dated April 26, 2004. Claims 1-4, 7-35 are now present in this case. Claims 5 and 6 are canceled. Claims 1 and 34 are amended.

The Office Action states that amendments to Figures 1 and 2a have not been received. A Request for Drawing Change was submitted with the previous response, filed on March 1, 2004. A copy of that request is enclosed herewith.

The applicants have previously argued that the reference cited as the basis for rejecting pending claims has an actual filing date later than the filing date of the present application. U.S. Patent Publication No. US 2002/0090942 A1 to Karabinis et al. ("the Karabinis publication") was filed on December 4, 2001 as a non-provisional of Provisional Application No. 60/250,461 ("the Karabinis provisional application"), filed on December 4, 2000. However, the non-provisional application contains significant amounts of new matter not contained in the provisional application. The new matter introduced in the cited reference (*i.e.*, the Karabinis publication) only receives the benefit of the actual filing date, which is subsequent to the filing date of the present application. In view of the fact that the basis for rejection of claims is a reference (*i.e.*, the Karabinis publication) that contains significant amounts of new matter, the applicants kindly request that the finality of the present Office Action be withdrawn.

The Office Action states that the Examiner has reviewed the provisional application of non-provisional application 09/835,006. Applicants believe this is a typographical error since Application No. 09/835,006 is the present application. It is believed that the Office Action is referring to the Karabinis provisional application and non-provisional application 10/000,799.

The applicants wish to express their appreciation to the Examiner for a telephone conference with the applicants' attorney on August 3, 2004 to discuss the introduction of new matter in the cited reference. The Examiner was in agreement with

the applicants' attorney that the cited reference (*i.e.*, the Karabinis publication) contained new matter.

Specifically, the Karabinis publication contains a description of communication technologies utilized by a satellite portion of a communications network and a terrestrial portion of the communication network. As described in paragraph 0044 of the Karabinis publication, both the satellite portion of the communication network and the terrestrial portion of the communication network may utilize GSM technology. However, an alternative embodiment discussed in that paragraph, the terrestrial portion of the communications network may utilize CDMA technology. This aspect of Karabinis et al. is also recited in claim 45 of the Karabinis publication. It should be noted that the entire description of communication technologies is new matter in the Karabinis publication. The Karabinis provisional application contains no such description. The Karabinis provisional application describes a technique in which a weak satellite signal is detected. If the satellite signal is sufficiently weak, that satellite channel may be reused by the terrestrial portion of the communications network. (See Figures 1 and 2.) Although the inventors clearly recognized the novelty and value of a satellite communication system utilizing a communication technology, such as GSM and a terrestrial communications network utilizing technology, such as CDMA, this aspect of the invention is not described in the Karabinis provisional application.

In contrast, claim 1 of the pending application is directed to a communication system having a satellite mobile communication network and a terrestrial communication network in which "said satellite mobile communications network communicates in frequency-divided fashion, using relatively narrow frequency channels within said bands" and "in which said terrestrial mobile communications network communicates in code-divided fashion, using relatively wide frequency channels within said bands wherein at least one of the terrestrial bands at least partly reuses at least one of the satellite bands." As noted above, the Karabinis provisional application does not teach or suggest a communications system in which the satellite communications network communicates in a frequency-divided fashion with relatively

narrow frequency channels while the terrestrial mobile communication network communicates in code-divided fashion, using relatively wide frequency channels. The use of code division with a relatively wide frequency channel, such as CDMA, is advantageous because it spreads the potentially interfering signal over a wider band width, resulting in a lower interfering energy signal per Hertz then would result in a GSM terrestrial communications network. Such an implementation is not even contemplated by the Karabinis provisional application. Accordingly, claim 1 is clearly allowable over the cited references. Claims 2-4 and 7-29 are also allowable in view of the fact that they depend from claim 1, and further in view of the recitation within those claims.

As further discussed with the Examiner on August 3, 2004, claims 7-12 of the pending application are directed to various preferential selections of satellite uplinks bands and downlink bands for reuse by the terrestrial communications network. The Karabinis publication includes a description of such preferential reuse and, in claim 13-20, claims various frequency allocation preferences. However, those frequency allocation preferences are new matter in the Karabinis publication. That is, the Karabinis provisional application contains no such description of preferential allocation of satellite uplink and/or downlink bands. As previously discussed, the Karabinis provisional application is directed primarily to the concept of frequency reuse based on detection of a weak satellite channel. The Karabinis provisional application does describe one channel allocation method in Figures 10a-10b and the accompanying description on pages 17-18. The example illustrated in those figures divides a portion of the spectrum into 100 channels in that example. The satellite portion of the communications network is allocated frequency channels starting from channel 1 while the base station is allocated frequency channels starting at channel 100. The Karabinis provisional application notes that "this scheme reduces the chances of reuse." (See page 17, lines 19-20.) This scheme describes frequency channels that are identical for the satellite communications portion of the network and the terrestrial communications portion of the network. Such an example teaches directly away from the invention recited in claim 1 wherein the satellite communications network uses relatively narrow frequency channels within the bands while the terrestrial communications network uses

relatively wide frequency channels within the bands. The Karabinis provisional application does not teach or suggest varying channel bandwidths, as recited in claim 1.

Claim 30 is directed to a method of allocating communication spectrum "in which a frequency band interferes with channels of a satellite communications system." The method comprises "allocating said frequency band preferentially to base stations in areas where shadowing will reduce the level of communications with the satellites of said satellite communications system." The Karabinis provisional application provides no such teaching or suggestion. As noted above, the Karabinis provisional application is directed to techniques for detecting and utilizing the weakest satellite signal in a terrestrial system. At page 5, line 5 to page 6, line 2, the Karabinis provisional application describes selecting the weakest signal. The Karabinis provisional application states that a fixed or mobile handset may be located in a basement, and states "In such a case, as shown in Figure 1, little or no signal is 'leaked' from the basement to the satellite. In the basement, however, there is coverage from the terrestrial base station." It should be noted that Figure 1 does not, in fact, illustrate the features described in the above passage. In any event, the sole purpose of describing the operation of a mobile handset in a basement is that there is a weak signal from the satellite. This does not suggest that where a frequency band interferes with channels of a satellite communication system, that interfering frequency band be preferentially allocated to base stations where shadowing occurs that will reduce the level of communications with the satellites, as recited in claim 30.

It should also be noted that the hypothesis upon which the Karabinis provisional application bases its technology may be in error. The theory upon which the Karabinis provisional application operates is that if the terrestrial handset detects a weak signal from a satellite, there is also a correspondingly weak signal from the handset to the satellite. This would lead one to assign that satellite frequency for reuse by the terrestrial handset. (See page 5, lines 15-24 and Figures 1-2.) Such an approach may not take into account the nearby presence of another terrestrial base station or mobile handset that may be communicating with the satellite on that channel. In accordance with the teachings of the Karabinis provisional application, the mobile

handset would reuse a channel on which the weakest satellite signal was detected. However, such reuse within the terrestrial communications system may cause interference with the nearby base station or mobile handset that is communicating with the satellite on that selected frequency. Thus, the system described in the Karabinis provisional application may not function properly.

In any event, the Karabinis provisional application teaches the selection of the weakest satellite signal for reuse, but does not teach or suggest allocating a frequency band that interferes with satellites to base stations only in areas where shadowing reduces the level of communications with the satellite. Accordingly, claim 30 is clearly allowable.

Claim 31 is directed to a method of reusing frequency bands between base stations of a terrestrial mobile communications network and a satellite communications network and recites "allocating said frequency bands using integrated resource management and other mitigation techniques in a way to minimize interference between both the systems and thus making optimum usage of valuable frequency spectrum." The only centralized control system described in the Karabinis provisional application is a switching center that assigns to the handset a satellite channel that is not in use. (See page 17, lines 1-4.) As noted in the Karabinis provisional application, if all satellite channels are in use, the switching center "preferably selects the satellite frequency channel with the weakest signal strength or alternatively, another algorithm that determines a preferred frequency channel to use." (See page 17, lines 4-8.) This passage contradicts the prior teachings in the Karabinis provisional application wherein the mobile handset computes signal strength from the satellites and selects a satellite channel having the weakest signal strength for that handset. (See pages 5-6 and Figures 1-2 of the Karabinis provisional application.)

Furthermore, the system may not function at all if implemented in accordance with the Karabinis provisional application. A centralized switching center cannot determine which satellite channels are weakest for a handset at some location remote from the switching center. Thus, the technique described on page 17 of the Karabinis provisional application will not work since the switching center cannot

determine the weakest signal and, accordingly, cannot possibly select a satellite frequency channel based on the weakest signal. The Karabinis provisional application provides no teaching or suggestion of a system in which frequency bands are reused between base stations of a terrestrial system using integrated resource management, as recited in claim 31. Accordingly, claim 31 is clearly allowable.

Claim 32 is directed to a communication system having a satellite communication network and a terrestrial communication network. Claim 32 recites *inter alia* "a controller to perform frequency planning based on a position of a selected one of the plurality of user terminals wherein the selected user terminal operates in a frequency designated by the controller, the designated frequency being in one of the terrestrial bands that at least partly reuses at least one of the satellite bands." As noted above, the Karabinis provisional application describes a frequency planning scheme in which channels are assigned to a satellite from one end of the band while channels are allocated to the terrestrial network from the opposite end of the band with the hope that such channel allocation will avoid frequency reuse. The Karabinis provisional application does not teach or suggest any frequency allocation based on a position of the user terminal. Accordingly, claim 32 is clearly allowable. Claim 33 is also allowable in view of the fact that it depends from claim 32, and further in view of the recitation within that claim.

Claim 34 is directed to a communication system having a satellite communications network and a terrestrial communications network. Claim 34 recites *inter alia* "a dual-mode user terminal capable of communicating with the satellite using the satellite uplink and downlink bands and capable of communicating with the base station using the terrestrial uplink and downlink bands, the user terminal communicating on one of the terrestrial bands that at least partly reuses at least one of the satellite bands." The dual-mode terminal comprises "a controller to detect transmissions between the base station and the satellite on an operational frequency in the satellite uplink and downlink bands, the controller causing the user terminal to cease using the operational frequency for communication with the base station upon detection of the transmission." The Karabinis provisional application does not teach or suggest any

such system. The Karabinis provisional application discusses inverse channel allocation, described above with respect to Figures 10a-10b as a means for avoiding frequency reuse. When frequency reuse becomes necessary, the satellite channel having the weakest signal is selected. However, there is no suggestion of a dual-mode user terminal with a controller that detects transmissions and, upon detection of transmission between the base station and the satellite, causing the user terminal to cease using that operational frequency for communication with the base station, as recited in claim 34. Accordingly, claim 34 is allowable over the cited references. Dependent claim 35 is also allowable in view of the fact that it depends from claim 34, and further in view of the recitation within that claim.

In view of the above amendments and remarks, reconsideration of the subject application and its allowance are kindly requested. If questions remain regarding the present application, the Examiner is invited to contact the undersigned at (206) 628-7640.

Respectfully submitted,

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